REMARKS

This is in response to the Office Action mailed on February 18, 2004, in which claims 1-3, 5, 7, 9-10 and 13 are rejected, claims 4 and 8 are objected to and claims 17-19 are allowed. Applicant amends the application to cancel pending claims 1-16 and 20-21, and adds claims 25-41. Claims 25 and 26 correspond to previously withdrawn claims 20 and 21 and claims 27-35 correspond to previously presented claims 7-16 (including previously withdrawn claims 11, 12 and 14-16).

Applicant acknowledges the Examiner's allowance of claims 17-19. Claims 25 and 26 specifically correspond to previous claims 20 and 21, which were withdrawn from consideration based upon a species restriction. Claim 17 is generic to all the species claimed in dependent claims 25 and 26. Therefore, claims 25 and 26 are allowable because they depend from an allowable generic claim.

Independent claim 27 recites a slider including a primary air bearing and a secondary air bearing comprising a transducing head. A compliant interface connects the primary air bearing to the secondary air bearing, wherein the compliant interface reacts such that the transducing head moves vertically with respect to the primary air bearing to maintain a substantially constant head media spacing between the transducing head and a surface.

To anticipate a claim, a reference must teach, suggest, or disclose each and every element as set forth in the claim. It is respectfully submitted that Matthews does not teach, suggest,

or disclose each and every element of claim 27, Matthews does not include a compliant interface connecting a primary air bearing to a secondary air bearing.

Matthews discloses a slider assembly with active control of head-to-medium clearance in a magnetic disc drive. The slider maintains a predetermined distance between the flying head and the medium by dynamically displacing the flying head in response to correction signals from a slider mounted proximity sensor. Slider 10 of Matthews includes a thin film magnetic head 28 mounted to a vertically moveable member 26. The member 26 includes a beam 32 mounted to the leading edge of the slider wherein a flexible vane 34 extends from the proximal edge of the beam and further defines a hammer-shaped distal edge 36. The magnetic head 28 is located at the distal edge 36 of the beam 32.

Affixed on the upper and lower surfaces of beam 32 are piezoelectric transducers 40 and 42. The transducers are deflected by means of an external control voltage, whereby magnetic head 28 will accordingly follow movements of the vane 34. By sensing the height of implanted region 38 of distal edge 36 above the surface of the magnetic medium, a variable voltage is developed proportional to distance for controlling the height of magnetic head 28. (Col. 3, lns. 24-69 and Col. 4, lns. 1-16).

Matthews discloses that in operation, when the disc is set in motion, a capacitance is developed between a sense electrode 70 and the disc, acting as a ground plane. Any deviation in the position of the transducer position, i.e., magnetic head, that is coupled to the sense electrode, will result in a change in the effective capacitance. Capacitance changes are used to develop a voltage

in an amplifier. The error amplifier output feeds the driver, which energizes PZT elements 88, i.e., transducers 40 and 42. The PZT elements respond to the energization by deflecting, thereby displacing the magnetic head coupled thereto. (Cols. 6-7, lns 6:63-7:10). Matthews uses a closed loop feedback system to provide active control of the predetermined distance between the magnetic head 28 and the magnetic medium during operation.

Transducers 40 and 42 of Matthews, which the Examiner identifies as an interface, do not connect a primary air bearing and a secondary air bearing. Rather, the transducers are attached to a beam extending from the slider with the magnetic head attached at an opposite end. The magnetic head 28 of Matthews is not attached to an air bearing at the distal edge 36 of the beam 32, nor is the magnetic head 28 pressurized or carried by an air bearing.

The present invention requires a compliant interface that reacts such that the transducing head moves vertically to maintain a substantially constant head media spacing. The present invention uses passive means to permit vertical movement of the transducing head with respect to the slider body in response to local disc surface topography and no active control is applied to the interface to vertically move the transducing head with respect to the slider body. Passive positioning is possible because during operation the air bearing surface is pressurized to follow the disc surface topography. The secondary air bearing, with the transducing head thereon, maintains a substantially constant head media spacing with the disc by its own action rather than being electro-actively held in place. In fact, all the species shown in the present application uses passive means to perform such a function.

In Matthews, head-to-medium clearance between the magnetic head and the magnetic medium is actively controlled by dynamically displacing the magnetic head. An external control voltage is applied to transducers 40 and 42 of Matthews to deflect beam 32 in a vertical direction and thereby move magnetic head 28 with respect to the magnetic medium to maintain head media spacing between the transducing head and the magnetic medium at a substantially constant separation distance. The transducers do not permit, merely allow, or react such that the magnetic head 28 moves vertically to maintain a substantially constant head media spacing, but rather are actuated to force displacement of the magnetic head.

Because the transducers of Matthews are not a compliant interface that connects the primary air bearing and the secondary air bearing as recited by claim 27 of the present application, Matthews does not teach, suggest or disclose each and every element of the rejected claim. Therefore, claim 27 is allowable. Claims 28-35 depend from allowable claim 27, and therefore are allowable as well. Further, claims 30, 31 and 33-35 specifically correspond to previous claims 11, 12 and 14-16, which were withdrawn from consideration based upon a species restriction. Claim 27 is generic to all the species claimed in dependent claims 30, 31 and 33-35. Therefore, claims 30, 31 and 33-35 are allowable because they depend from an allowable generic claim.

Independent claim 36 requires a compliant interface that connects a primary air bearing to a secondary air bearing, the compliant interface substantially surrounding the secondary air bearing. The compliant interface reacts such that the transducing head moves vertically with respect to the primary air bearing to maintain a substantially constant head media spacing between

the transducing head and a surface. The Examiner has indicated as allowable a slider including an interface that substantially surrounds the transducing head or secondary air bearing of a slider (e.g., pending claim 17 and previously objected to claims 4 and 8, which have subsequently been canceled). Therefore, claim 36, which requires that the compliant interface substantially surrounds the secondary air bearing, is allowable. Claims 37-41, which depend from claim 36, are allowable as well.

Claims 39 and 40 specifically correspond to previous claims 11 and 12, which were withdrawn from consideration based upon a species restriction. Claim 36 is generic to all the species claimed in dependent claims 39 and 40. Therefore, claims 39 and 40 are allowable because they depend from an allowable generic claim.

Based upon the above comments a Notice of Allowance is respectfully requested.

Respectfully submitted,

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